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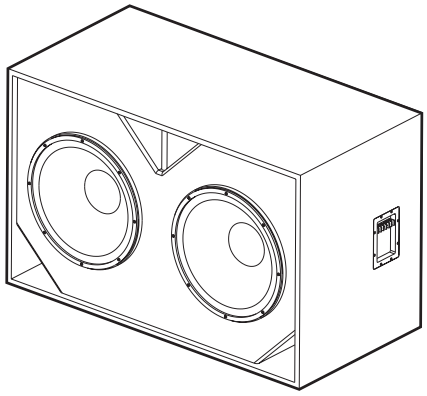
Cinema Loudspeaker Systems User Manual

SB-5218 and SB-7218 Dual-18" Subwoofers

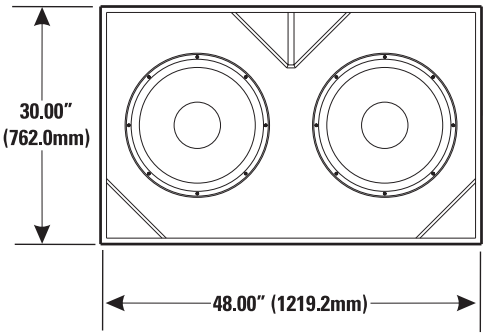
Introduction



The SB-5218 and SB-7218 are specially designed cinema subwoofers, featuring dual 500 and 700 watt, respectively, 18" (460mm) low-frequency transducers mounted in ported enclosures. The enclosures are tuned to 25 hertz and use a B6 alignment. These should be used with the B6 boost filter option provided by the QSC SF-1 or SF-3 Subwoofer Filter modules or the QSC Digital Cinema Monitor to ensure extended response to the lowest audible frequencies.

Meeting cinema requirements for the extended low frequency response differentiates the SB-5218 and SB-7218 from more conventional "rock-and-roll" subwoofer systems. Their frequency range extends to below 25 hertz when used with the correct B6 filter.

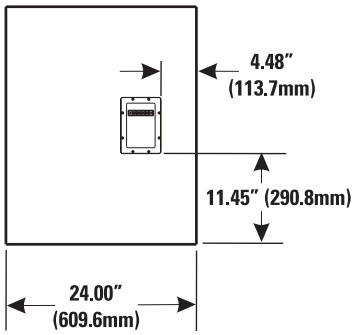
The two custom 500 watt (700 watt, SB-7218), 18" transducers were developed especially for cinema use. The woofers feature 4" (100mm) voice coils and vented pole pieces to ensure cool operation, even at high power levels. Cooler temperatures increase driver lifespan and decrease problematic power compression at high drive levels. Undercut pole pieces provides a Symmetrical Magnetic Gap (SMG), reducing second harmonic distortion.



Enclosures are constructed of high quality MDF panels and feature Single Woofer Chambers (SWC). The separate chamber for each transducer makes the enclosure stronger, provides rigidity, and prevents cone over-excursion in the rare event of a driver failure (enclosure "loading" is not lost for the remaining transducer).

Large, Fully Radiused Ports (FRP) ensure smooth air flow through the ports, especially at higher drive levels. This prevents potentially audible port turbulence noise. Both internal and external port openings are fully radiused.

With Symmetrical Port Loading (SPL) bass ports are evenly spaced on each side of the transducers, making internal pressure more uniform across the back surface of the transducer. This prevents the cone from being displaced to one side or another by unbalanced air pressure, reducing the chance of driving the voice coil out of the center of the gap at high drive levels.



Enclosure is not designed to be suspended, flown, or rigged. Do not suspend, fly, or rig this enclosure.

This product is capable of producing sound pressure levels that can permanently damage human hearing. Always keep sound pressure levels in the listening area below levels that can damage human hearing.

Install in accordance with QSC Audio Product's instructions and a licensed, professional engineer. Only use attachments, mounts, accessories, or brackets specified by QSC Audio Products, Inc. Refer all servicing to qualified personnel. Servicing is required when the apparatus has been damaged in any way.

WARNING! Before placing, installing, rigging, or suspending any speaker product, inspect all hardware, suspension, cabinets, transducers, brackets and associated equipment for damage. Any missing, corroded, deformed or non-load rated component could significantly reduce the strength of the installation, placement, or array. Any such condition severely reduces the safety of the installation and should be immediately corrected. Use only hardware which is rated for the loading conditions of the installation and any possible short-term unexpected overloading. Never exceed the rating of the hardware or equipment. Consult a licensed, professional engineer when any doubt or questions arise regarding a physical equipment installation.

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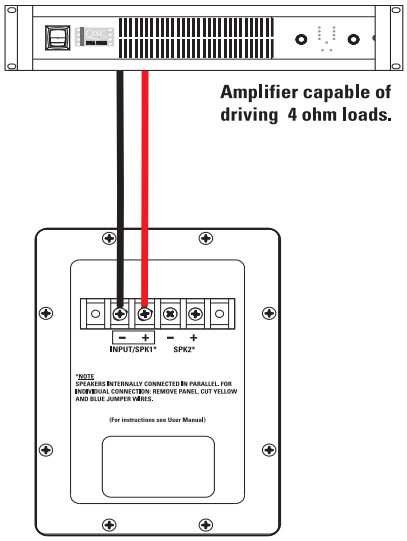
Connections

Normal Connection

The SB-5218/7218 has barrier strip screw terminals for connection. The terminals accept up to #10 AWG stranded loudspeaker wiring. Use the largest wire size and shortest wire length possible for a given installation. Observe the polarity markings and keep polarity consistent throughout the system for best performance.

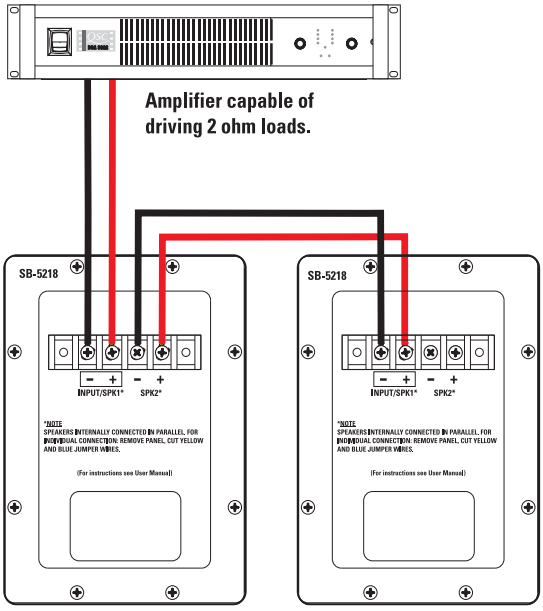
Normal Connection Example:


Amplifier capable of
driving 4 ohm loads.
INPUT/SPK1*
SPK2*
*NOTE
SPEAKERS INTERNALLY CONNECTED IN PARALLEL. FOR INDIVIDUAL CONNECTION: REMOVE PANEL, CUT YELLOW AND BLUE JUMPER WIRES.
(For instructions see User Manual)

Parallel Connection of Second SB-5218/7218

The terminals marker SPK2 may be used to connect another SB-5218/7218 in parallel. Connect the wires as shown in the illustration, at right. Note: If the SB-5218/7218's internal wiring has been modified in any way, this may not function. If this is the case, remove the terminal cup and verify the presence of the factory yellow jumper and blue jumper wires; remedy as required or have the loudspeaker serviced.

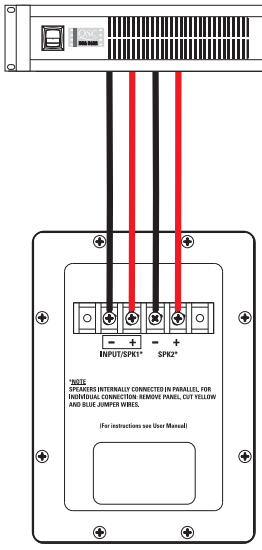
Parallel Connection Example:



Individual Transducer Connection (requires modification)

The transducers are wired in parallel inside the enclosure. If individual transducer connection is required, remove the terminal cup and remove the yellow and the blue jumper wires that are connected between the SPK1 and SPK2 terminals. Replace the terminal cup and mark the enclosure with a note of the modification.

Individual Transducer Connection Example:


INPUT/SPK1*
SPK2*
*NOTE
SPEAKERS INTERNALLY CONNECTED IN PARALLEL. FOR INDIVIDUAL CONNECTION: REMOVE PANEL, CUT YELLOW AND BLUE JUMPER WIRES.
(For instructions see User Manual)

CAUTION! Requires removal of terminal cup and cutting of both the yellow and the blue jumper wires that connect the SPK1 and SPK2 terminals.

Specifications (subject to change without notice)

	SB-5218	SB-7218
Frequency Range:	24 - 100 Hz (±3 dB) 19 - 250 Hz useable range (-10 dB)	22 - 100 Hertz (±3 dB) 19 - 250 Hertz useable range (-10 dB)
Maximum Output:	135 dB SPL calculated peak 1 meter, half space, at rated rms power with 6 dB crest factor pink noise input, 25 - 250 Hertz.	137 dB SPL calculated peak
	129 dBA SPL calculated maximum continuous 1 meter. The dBA scale is typically used to identify sound sources which can cause permanent hearing loss.	130.5 dBA SPL calculated maximum continuous
Impedance:	4 ohms, nom. (3.2 @ 25 Hz., 62 @ 50 Hz.)	4 ohms, nom. (3.2 @ 27 Hz., 28 @ 48 Hz.)
Maximum Input Power:		
100 hours of 6 dB crest factor pink noise, 25 - 250 Hertz	800 watts rms	1200 watts rms
2 hours of 6 dB crest factor pink noise, 25 - 250 Hertz, AES method	1000 watts rms	1500 watts rms
Recommended Amp Power:	1600 watts rms maximum	2600 watts rms maximum
Sensitivity: (25 - 100 Hz, 1 watt, 1 m.)	99.5 dB half space 93.5 dB full space	101.0 dB half space 95.0 dB full space
Weight:	225 lbs. shipping, 205 lbs. net (102/93 kg.)	230 lbs. shipping, 210 lbs. net (104/95 kg.)

Both Models-

Nominal Coverage: Omnidirectional (80 Hz)

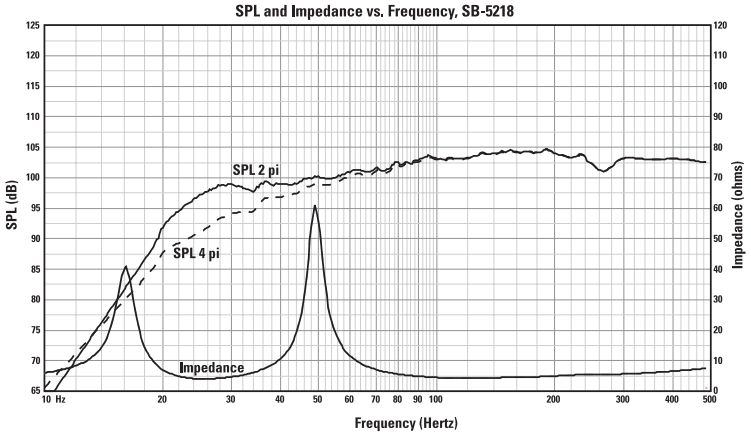
Recommended Processing: LF boost- freq.= 25 Hz, Q=2.0, gain= +6 dB. QSC DSP configurations are available at www.qscaudio.com. Parameters for alternative processing hardware are available upon request.

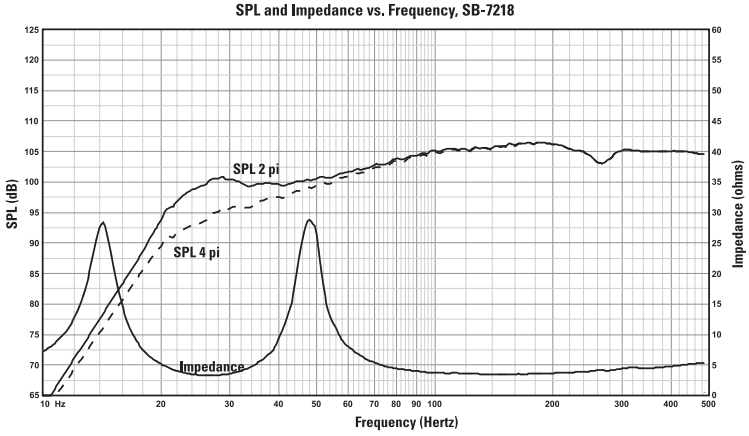
Connectors: Barrier strip screw terminals accept up to #10 AWG stranded wire. Four terminals: (two INPUT and two PARALLEL OUT). Drivers are internally wired in parallel. For independent transducer connection, remove blue jumper wire and yellow jumper wire on internal-side of terminal cup and mark enclosure accordingly.

Transducers: Two 18" (457mm) high efficiency subwoofer transducers featuring vented 4" (100mm) copper voice coils on Kapton® formers. High excursion/low distortion design, with extremely high power handling, and low thermal and port compression.

Enclosure: B6 alignment, vented enclosure with symmetrical port design, tuned to 25 Hz, constructed of medium density fibreboard and heavily braced. Features vandal resistant woofer mounting bolts.

Size: 30" wide X 48" high X 24" deep (762 mm X 1220 mm X 610 mm)





Warranty (USA only; other countries, see your dealer or distributor)

Disclaimer

QSC Audio Products, Inc. is not liable for any damage to amplifiers, or any other equipment that is caused by negligence or improper installation and/or use of this loudspeaker product.

QSC Audio Products 3 Year Limited Warranty

QSC Audio Products, Inc. ("QSC") guarantees its products to be free from defective material and / or workmanship for a period of three (3) years from date of sale, and will replace defective parts and repair malfunctioning products under this warranty when the defect occurs under normal installation and use - provided the unit is returned to our factory or one of our authorized service stations via pre-paid transportation with a copy of proof of purchase (i.e., sales receipt). This warranty provides that the examination of the return product must indicate, in our judgment, a manufacturing defect. This warranty does not extend to any product which has been subjected to misuse, neglect, accident, improper installation, or where the date code has been removed or defaced. QSC shall not be liable for incidental and/or consequential damages. This warranty gives you specific legal rights. This limited warranty is freely transferable during the term of the warranty period.

Customer may have additional rights, which vary from state to state.

In the event that this product was manufactured for export and sale outside of the United States or its territories, then this limited warranty shall not apply. Removal of the serial number on this product, or purchase of this product from an unauthorized dealer, will void this limited warranty. Periodically, this warranty is updated. To obtain the most recent version of QSC's warranty statement, please visit www.qscaudio.com. Contact us at 800-854-4079 or visit our website at www.qscaudio.com.

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